

Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A rectangular waveguide comprising:

a pair of main ground electrodes disposed so as to face each other in parallel with each other with a dielectric in between; and

a pair of side walls, each side wall constructed of a plurality of sub ground electrodes provided between the pair of main ground electrodes, the sub ground electrodes stacked in parallel with the main ground electrodes with a interval along a direction orthogonal to the main ground electrodes,

wherein electromagnetic waves in the TM mode propagate in a region surrounded by the pair of main ground electrodes and the pair of side ~~walls~~walls,

when the interval is "a", frequency of the electromagnetic wave is "f", dielectric constant of the dielectric is ϵ_r , light velocity is "c", and natural logarithm is "e", the interval "a" and a width L satisfy the following equation (1):

$$L \times ((\pi/a)^2 - (2 \times \pi \times f/c)^2 \times \epsilon_r)^{1/2} \geq 1/\log_{10} e \dots (1), \text{ and}$$

the width of each of the sub ground electrodes is equal to or greater than L.

2. (Canceled)

3. (Currently Amended) The rectangular waveguide according to claim 1, ~~further comprising resistor layers formed, in regions apart from an inner end face of each of the sub ground electrodes more than the length L, on both faces of each of the sub ground electrodes, and formed, in a region facing the regions, on each of the main ground electrodes. wherein~~
each sub ground electrode includes an inner end face adjacent to the region and an outer end face distal from the region,

wherein, for each sub ground electrode, a resistor layer is disposed near the outer end face of the sub ground electrode and away from the inner end face of the sub ground electrode by at least a length greater than the width L.

4. (Canceled)

5. (Currently Amended) The rectangular waveguide according to claim 1, further comprising a wave absorbent layer ~~formed~~disposed so as to extend between the pair of main ground electrodes ~~on the side of~~outside of the outer end faces of at least one stack the sub ground electrodes.

6. (Canceled)

7. (Currently Amended) The rectangular waveguide according to claim 3, further comprising a wave absorbent layer ~~formed~~disposed so as to extend between the pair of main ground electrodes, ~~on the side of~~outside of the outer end faces of at least one stack the sub ground electrodes.

8. (Canceled)